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DCIM, what can it do for me? An IT perspective.

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Introduction – my background

- 26 Years in IT related fields
- Managed Data centers in Multiple countries in Asia

- CEO of Cormant and based in California

- Suffered through losing track of IT Assets and Infrastructure
- Had data center managers who reported to me send me unintelligible reports, that were late and almost always wrong
- Planning and budgeting was a whimsical exercise in guessing what we might need next year based on what we thought happened in the current year and what we had running

- Lived in the days when the only limitation to what was in a rack was RU space

This Session

- What is DCIM
  - DCIM Myths & Reality
- DCIM in the Context of IT
- DCIM IT Use & Benefits
- DCIM Adoption and Implementation
- Considerations in Selecting a Solution
- Q & A



DCIM MYTH VS. REALITY

DCIM myth vs. reality

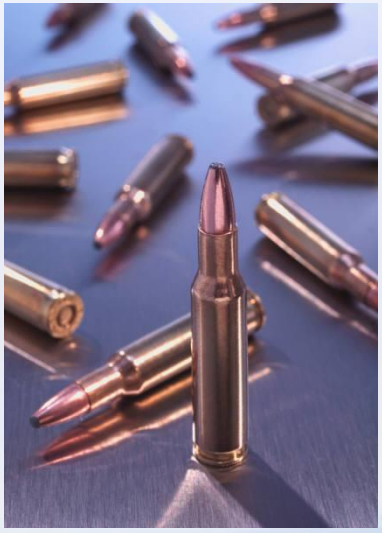
- *"DCIM has one meaning"*
  - It's more like a 'four letter' word right now
  - Far too broad a term to have one meaning

- *"DCIM tools don't need to be bought with services to implement them and really auto-discovery will do most of the work."*
  - Implementation by a professional, experienced company (that may not be the software vendor) is vital to make DCIM work. Big area of disappointment.
  - Auto discover is at best a validation tool, it's not going to document your most of your physical infrastructure, especially where things are.

DCIM myth vs. reality

- *"Your power bill will drop 20% once you have installed a DCIM tool."*
  - Unlikely, You will find savings and efficiency gains, but will offset them with growth.
- *"Once you have implemented a DCIM solution your records will be perfect – all the time."*
  - Something like 30% of the success of any DCIM solution is process change/enforcement. Often missed entirely.
- *"With a DCIM solution you will be going home at 4 PM and will never get another phone call at 2 AM."*
  - *If only!*

There are no silver bullets!



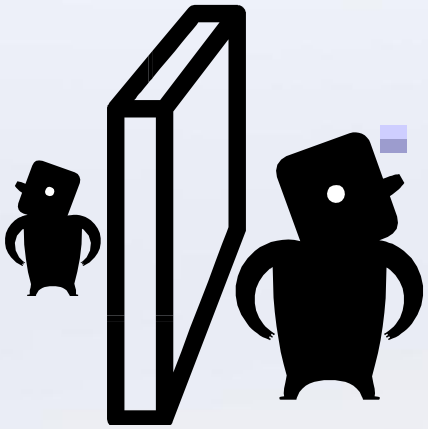
(This one is gold)

DCIM IN THE CONTEXT OF IT

The Data Center Divide

- Facilities - Suppliers
  - Supplies Power
  - Supplies Cooling
  - Supplies Space
- Limited visibility of facility information to IT

- IT - Consumer
  - Consumes Power
  - Requires Cooling
  - Uses Space
- Limited feedback of deployment plans to facilities
- Limited interest in facility data



Shared pressure to collaborate to deliver more with the existing infrastructure

The Data Center Infrastructure

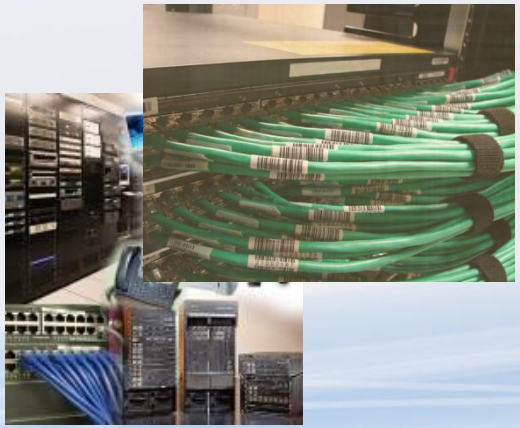
- Halls
- Racks
- Network Equipment
- Structured Cabling
- VLANs
- Power to the rack
- UPS
- Generators
- CRAC / HVAC
- High Voltage Power



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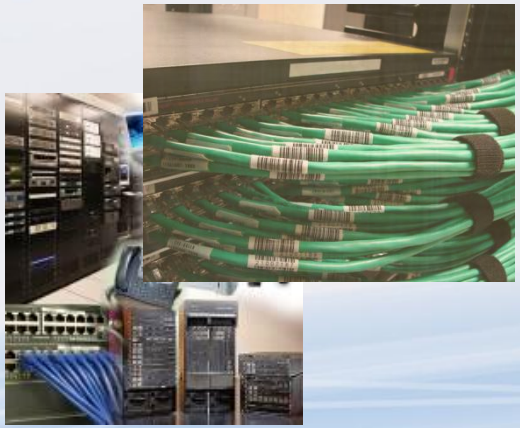
Infrastructure in red usually managed by a BMS



DCIM: The Data Center Infrastructure

- Halls
- Racks
- Network Equipment
- Structured Cabling
- VLANs
- Power to the rack
- UPS
- Generators
- CRAC / HVAC
- High Voltage Power

- Servers
- Data Storage
- MDF/IDF rooms
- Store/Staging rooms
- Other equipment



DCIM – not one size fits all

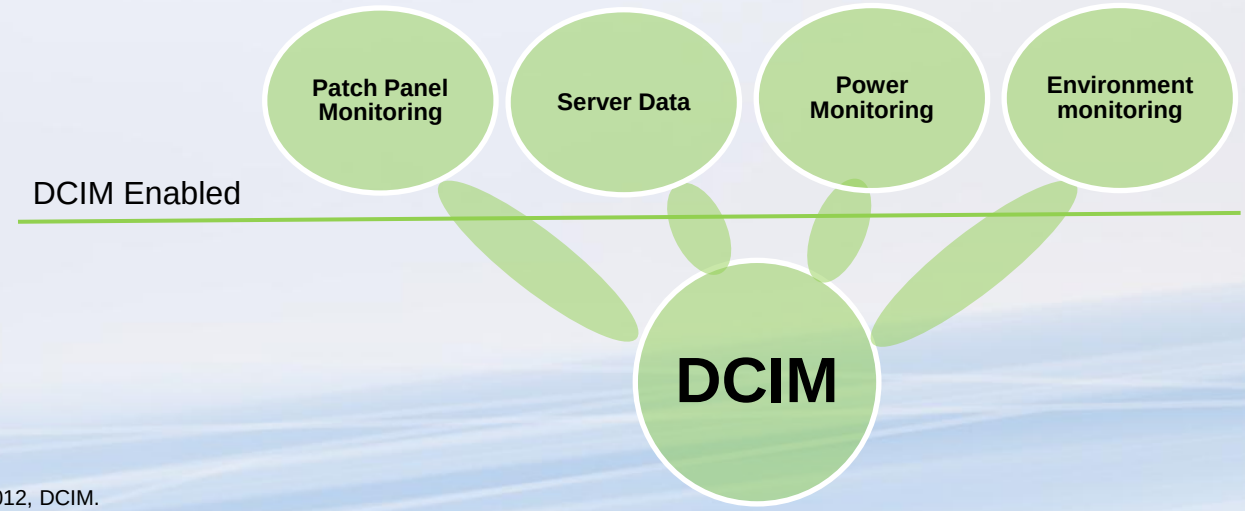
- DCIM solutions come in all shapes and sizes, with more or less specializations, including
  - Power
  - Asset
  - Space
  - Connectivity
  - Monitoring
  - Environmental
  - Work management
- Some solutions are better suited to specific organizational size from a single site, to a global enterprise

- DCIM is not
  - NMS
  - BMS
  - Ticket system (well not entirely)
  - Server control.
  - Load management
  - Process management

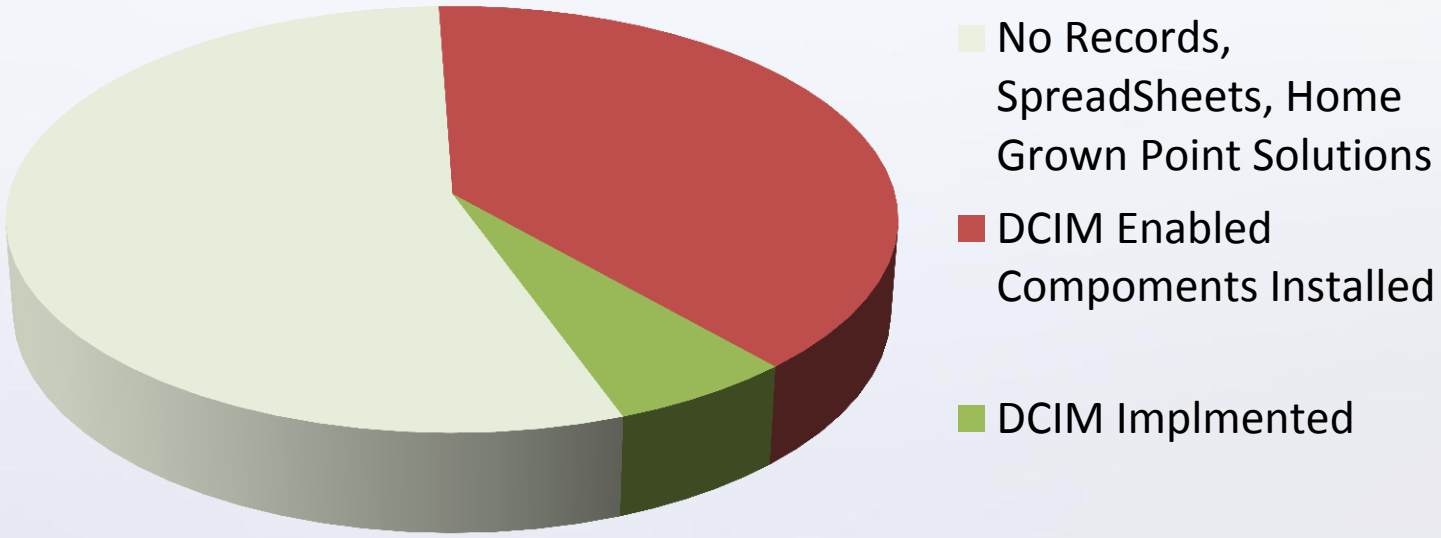


DCIM & DCIM Enabled

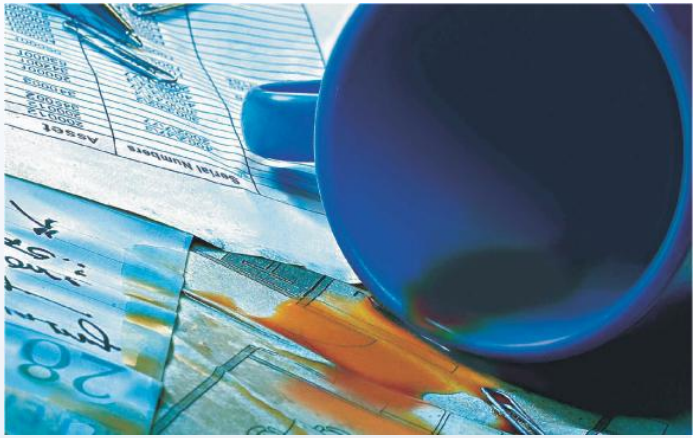
- Over one hundred self-claimed DCIM vendors
- Even if we assume some are not just jumping on the bandwagon, we can assume that they are not all identical or even focusing on the same areas of the Data Center.
- A number of solutions might be better described as “DCIM enabled” than DCIM



End-User Infrastructure Management Market Today



The current IT DC paradigm



- Inconsistencies in current documentation, multiple copies, multiple processes, many stakeholders.
  - Creates re-work and wastes time
  - Slows the deployment process, many audits
  - Makes troubleshooting difficult
  - Lost assets
- Local databases
- Scripts pulling data off devices
- Scripts pulling data out of databases and putting it somewhere else
- Dreading monthly reporting
- Change management problematic and historical data impossible

Data Center IT Challenges

- As data centers fill up finding available capacity is not an easy task
  - Multiple groups, Multiple variables, Poor records
- Modern network equipment and servers are more demanding of resources
  - Increased power and heat density
  - Need to protect the data center life
- Zombies





- Green IT initiatives (EPA and EU)
- Complying with regulatory bodies

DCIM IT USE & BENEFITS

IT DCIM Data Center Needs

- Planning
  - A tool everyone can use to build consensus
  - Predicting and visualizing the future
- Infrastructure and Equipment relationship
  - To better consume the data center facility
  - Balancing the load and understanding the risks
- Understanding Constraints
  - Working within limitations – whatever they maybe
- Monitoring
  - Integration with external components: see the facility in near real-time
  - Report status of deployments in a real-time paperless environment

- Getting the most out of the data center, maximizing capital and operating expenditure

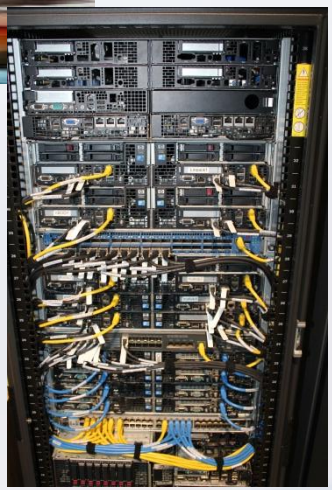
Whatever you are doing, good data is vital



DCIM & IT

- Consolidating existing data silos, spreadsheets and paper records
  - Contextualizing previously disparate data
- Driving, monitoring and measuring process change, through implementation of DCIM
- Using DCIM as a common language for all of IT (and facilities) when they talk to each other

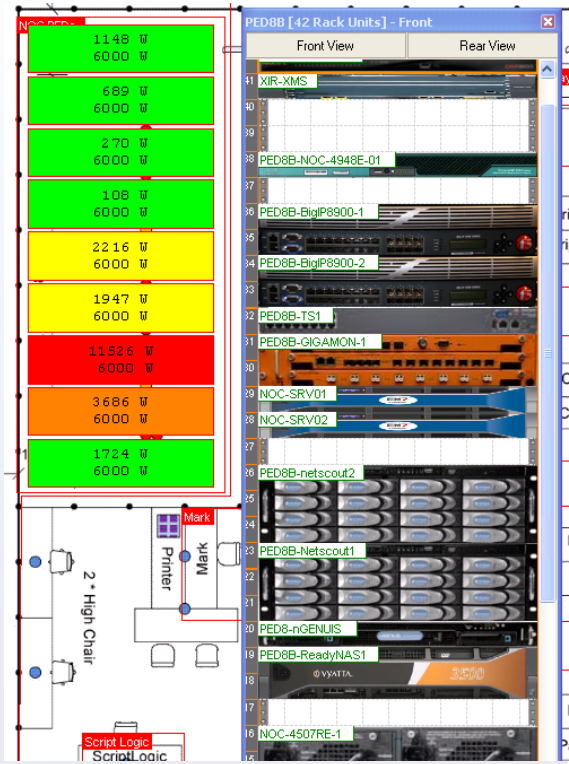






What IT need from DCIM

- Data store
  - Every piece of equipment and device – passive or active, within the data center and associated spaces, including manufacturers values
  - All connectivity including copper, fiber, SAN, power
  - Power/Temperature/BMS integration
- Visualization and Reporting
  - Dynamic views of the DC, including current and future capacity
  - Trending, historical and future capacity
- Planning and task management



End to end IT Process Management with DCIM



DCIM Deployment Success

DCIM Use and Success - I

- **Healthcare provider with IT as a cost center**
  - Pre-DCIM 1 person full time on XL data updates
  - An additional 3 – 5 person days per month to create cost reports
  - With DCIM – 1 person part time to maintain data and reports are produced in 1 – 2 hours.
- **Global Financial Services, multiple DC's**
  - DCIM data stored in at least 3 separate commercial solutions, plus multiple scripts and local DB's for various views.
  - 5 - 6 people required to decide on server deployments
  - Moving to a single global view with 1 DCIM solution and all data consolidated to a single repository.
  - Potential for 1 – 2 people to decide on server deployment.
  - Significant savings in multiple system maintenance cost & no dup data

DCIM Use and Success - II

- **Global Infrastructure Manufacturer**
  - Was worried about equipment sitting in store rooms attached to data centers
  - Used DCIM data to report on equipment in stores and associated depreciated cost.
  - Able to save over US$ 1 million in 6 months in terms of asset utilization
- **Government Department**
  - Multiple remote sites across multiple countries. Time consuming to gain accurate visibility of the assets and infrastructure at those sites.
  - DCIM solution deployed to even 1 rack sites. Allows local staff to assist with trouble shooting and changes are recorded
  - Data used for pre-planning major change, saves 1 round trip per site
  - DCIM solution used for on-site audits from time to time.

DCIM Use and Success - III

- **Network Provider**
  - Unmanaged equipment deployment and patching in the DC
  - Used their DCIM implementation as a catalyst to tidy and re-patch an existing datacenter site.
  - Benefit were process related. Staff willing to use a new process and tools as they saw change.
  - 15% asset recovery of unused equipment, data and power connections.
- **Network Equipment Manufacturer**
  - Time to make change used to be 2 days due to DC access control and need to audit before work planned.
  - Post DCIM, & with a trusted information set, work is planned and executed on the same day in some cases turning a 2 day process into 2 hours.

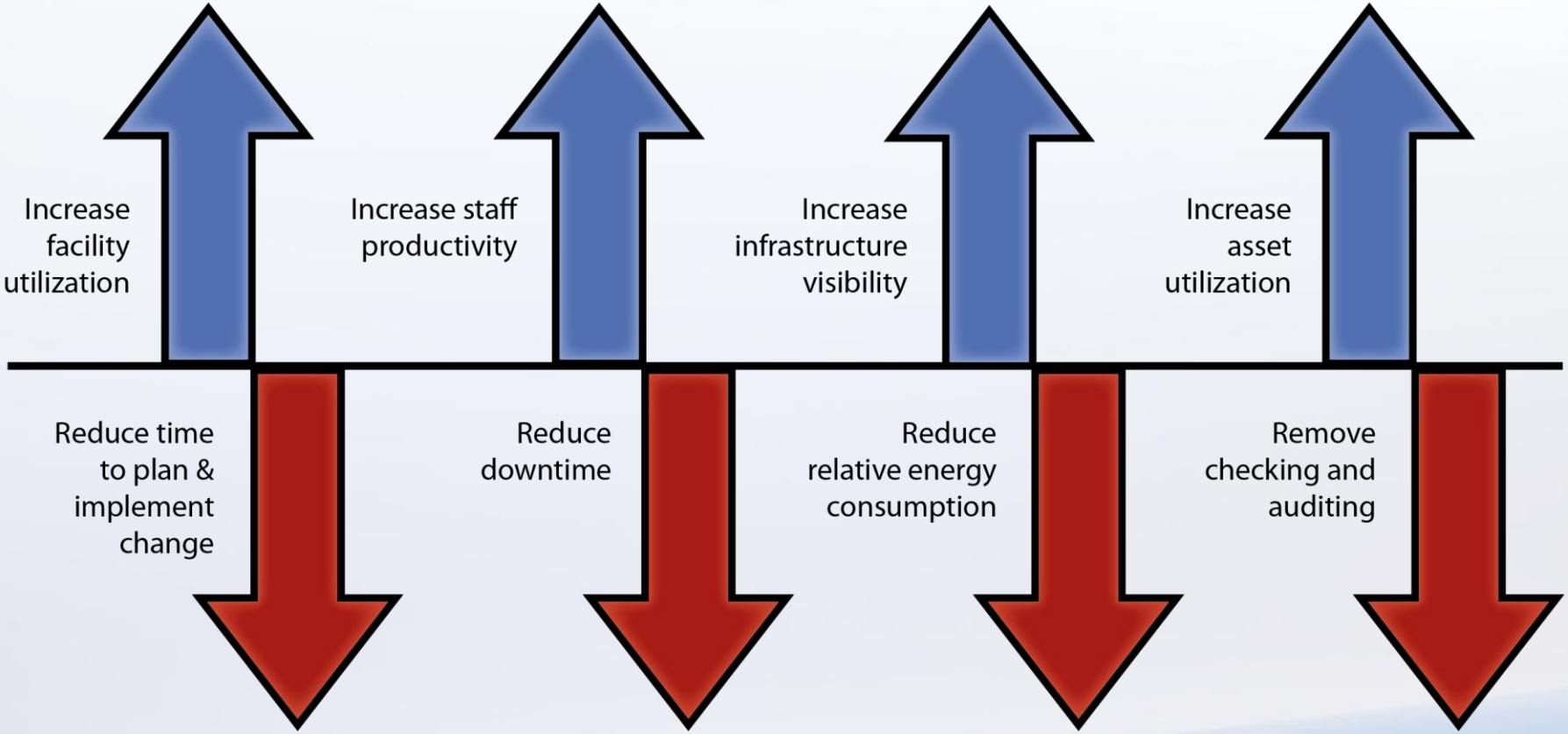
DCIM Benefits

DCIM Single Repository IT Benefits

- Pre-planning saves time and speeds deployment of equipment
- Infrastructure, connectivity and asset records means planning driven by joined-up-data, not assumptions
- Full life cycle asset inventory, stops lost equipment
- Network queries tracks power, temperature, UPS health and confirming switch port connectivity.
- Remove assets you don't need
- Visibility, find under utilized capacity



DCIM IT Benefits



ROI?

- Asset & Infrastructure recovery and budget planning
  - Visibility & Management of assets ensures targeted cost effective change
- Increased uptime
  - Operational improvements, mitigate risk
- Labour and time saving for administering network changes
  - Accurate information speeds planning change
- Process Improvement
  - Act of implementing a DCIM solution should cause process improvement
- Power saving
  - Consuming the facility more efficently



ROI is possible within 6 – 12 months

DCIM ADOPTION & IMPLEMENTATION

Where to Start – Initial Planning

- Understanding the project scope
  - What does IT want from this project
  - List the top pain points around data center IT management

- Engage with the facilities teams and discuss pain points between the groups
- Goal
  - no XL
  - Common understanding of the infrastructure
  - Fix your top issues



Where to start

- Keep the initial deployment simple: Money follows Success
  - Don’t get too carried away with size, focus on solving some real problems
- Think Small (that maybe 1,000 racks!) and geographically limited
- Look ahead, what areas may become issues in the future
  - Equipment refresh
  - Power
  - Data center move
  - Consolidation, virtualization
  - Mergers and acquisitions
  - Green initiatives
- Think across the enterprise



Scope



- Be realistic
  - Cross function agreement is hard
  - “Let’s manage everything”, may not be realistic or even desired.
  - Just enough management
- Look at ROI – will you see a (realistic) return?
  - Including equipment, training and implementation costs
- Use a maturity model approach to use
  - Get control of what you have
  - Start to monitor
  - Use the data to for analysis and diagnosis

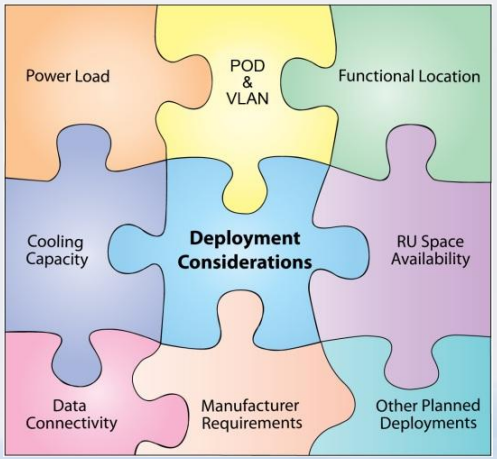
Post implementation process

- Think about how the DCIM needs to be used in the enterprise.
- Everyone is different, but using a DCIM tool will require process change.
- Defining your to-be process up front will make vendor selection and implementation much easier.



DCIM Deployment

- Use the post implementation process to drive deployment
  - How will the infrastructure be maintained
  - Data output
- Set-up global configuration information at the start
- Use outside help to get going
  - Most people too busy with the day to day
- Import existing data and then use mobility to confirm it



DCIM Pitfalls

- Too broad an initial project scope
- Collecting data that is of no use
- Expecting DCIM to solve problems without recognizing process change is vital
- Choosing a solution that requires developer customization to be useful
- Not being clear on precisely how you intend to use the solution
- Not getting external implementation help



WHAT TO CONSIDER WHEN SELECTING A DCIM SOLUTION

Starting the Selection Process

- Prioritize Your Problems; e.g.
  - I am running out of space for servers
  - I am running out of power
  - Finding servers when there are problems is almost impossible
  - I know I have zombies, but I don't know where
- Pick a DCIM solution that has a proven ability to grow. There is no limit to the future problems a good solution can solve
- Consider how the DCIM solution will it stay up-to-date

Questions to ask yourself, before you start

1. What are my biggest problems today?
2. How good is my documentation of what I have today?
3. Do I understand what problems I want to solve?
4. Do I want on-going help to manage the solution?
5. Do I have the will to enforce a single process?
6. What cross department buy in do I have?
7. What is our go-live process, do we have issues with that or with finding equipment later (during downtime)?

Questions to ask vendors

1. Current customer base and type are they similar to you?
2. Solution maturity, what version is this?
3. What implementation support is available?
4. Is mobility built into the solution – tablets, handhelds, etc.?
5. What additional hardware is required?
6. Is the product configurability (user managed) or require customization (developer managed)?
7. How will the solution scale?
8. What interfaces does the solution have?
9. What is the support model?
10. What parts of my problem set does the solution cover and what it does not?
11. Road map, where is the solution going? (but don't buy futures)

Selection process

- Is a full version proof-of-concept possible
  - this is the best way to kick the tires.
  - If it's not, why not (don't buy complexity)
- Ease of installation
  - a big cost and understanding what is possible needs to be part of the decision process
- What is the expected ROI
  - how is that derived, do you believe it?



What you should expect to buy

- Software license
- On-going upgrade assurance / technical support

- Process documentation services
- Professional services for solution configuration and data import
- Labor for audit
- Solution Training

- Additional required hardware



SUMMARY

When is a good time to buy?

- If you are undertaking any significant data center investment
- If you have more than about 50 racks or 100KW of power
- You are close to capacity limits of existing sites
- You hate your spreadsheets
- You are being asked to cut power, prove green initiatives, improve capital utilization

Start on the DCIM Path

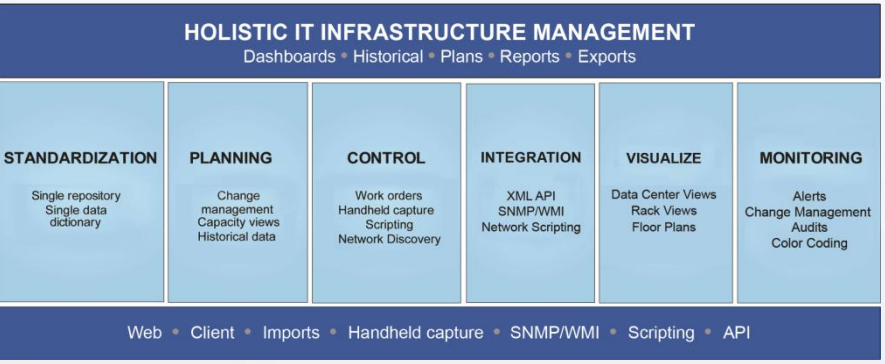
- Evaluate DCIM products now, prior to full adoption
- Make sure you know what your problems are before you start evaluating solutions
  - Plan for the future
- Define your expected DCIM post-implementation process and how you expect to use the solution; share this with vendors
- Speak with facilities (M&E) make sure what you are planning does not overlap with their solutions
- Factor in implementation costs, they can be substantial

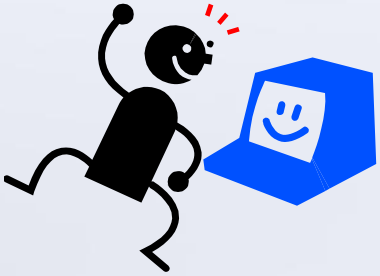
DCIM - What really works?

- Simplicity
  - Aids adoption within core group, makes training easy, allows for churn, means further adoption as success is demonstrated
- Accessibility
  - If it's easy to get access to the data it's far more likely to be used
- Standardized product
  - Customization makes upgrades hard
- Flexibility
  - The solution should be grow with the enterprise and solve new challenges
- Just enough management
  - Solve the biggest problems

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Thank You





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